REFRESHER COURSE FOR GENERAL PRACTITIONERS

PHYSICAL METHODS OF TREATMENT IN PSYCHIATRY

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No general practitioner can afford to regard psychiatry as a remote specialty of which he need know nothing. Psychiatric illness is far too common for that. It has been estimated that nearly half of the hospital beds in the country are occupied by psychiatric patients; and about one-third of all the patients going to their doctors for help have symptoms which are caused or complicated by psychological factors. Even if these patients are referred to hospitals or clinics they are likely to be handed back to their own doctors again. The family doctor is likely to be the last as well as the first court of appeal, especially when the patient has been seen by specialists of rival schools who have tendered mutually conflicting advice. The bewildered patient will then go to his own doctor, who, he trusts, will decide these complicated questions for him on a basis of common sense. Furthermore, psychiatry depends on the general body of medical knowledge and opinion for guidance in making its advances. The family doctor knows which of his patients have benefited from one or another method of treatment. If in fact some theory of psychiatry proves of little practical use, its adherents, however fanatical their faith, will eventually be brought into touch with reality by a dwindling clientele. In the conference rooms of learned societies abstruse theories will continue to be debated in magniloquent terms. The wise practitioner will eschew theory but pay the closest attention to clinical facts, and judge from them alone.

In this article methods of treatment are discussed which have no adequate theoretical basis. Their discoverers were often led by theoretical notions which now no longer gain much credence. The reason why these methods are still used is because they are actually found to work. The lack of theoretical foundation cannot be claimed as a merit. But it must be remembered that many of the most effective methods of treatment in general medicine were discovered in the same accidental way—the use of liver extract to treat pernicious anaemia, for example. Much of our medical knowledge has been gained the wrong way round, and a discovery in therapy has compelled reconsideration of pathogenesis. Psychiatry to-day is in a stage of development in many ways equivalent to that of general medicine a hundred years ago, and we can expect advances to occur in the same way.

The three methods of treatment discussed in this article have altered the face of clinical psychiatry. Before their advent the hospital psychiatrist had to watch the progress of his patients uphill or down almost with folded hands. Only in the case of the general paretic was he able to take active remedial measures. Since the discovery of insulin coma treatment, electric convulsion therapy, and leucotomy the outlook for the great bulk of his patients has been altered immeasurably. This change has not occurred without putting new responsibilities on the general practitioner. It is now his duty to see that no one of his patients slips into a state of dangerous depression or mental alienation without being put in touch with the sources of aid. The several indications of these treatments are of immediate interest to all doctors who are directly in touch with and are directly consulted by the general public.

Insulin Coma

The indication for insulin coma treatment is in the first place a diagnosis of schizophrenia. It is therefore essential that this diagnosis should be made or excluded. If the general practitioner has a patient whose history and clinical condition are suspicious and refers him to an expert for an opinion, he should be able to rely on an expert answer in one sense or the other.

Importance of Early Treatment in Schizophrenia

There is no really satisfactory treatment for schizophrenia, but insulin treatment is the best we have. All attempts to show by the statistical analysis of follow-up data that other methods of treatment, such as electric convulsion therapy, electro-narcosis, or psychotherapy, have any beneficial effect have so far failed. The evidence of benefit from insulin coma treatment is, however, convincing, even though one cannot rely on a cure. To obtain benefit, early treatment is essential. During the war soldiers who broke down with schizophrenic illnesses were often in psychiatric hospitals in a matter of days, and the therapeutic results then obtained were spectacular. It is much more difficult to ensure that the civilian patient is seen so soon by a doctor, and patients and their relatives will often go on for months tolerating symptoms which would call for immediate action in the Services.

If the patient can be treated in the first three months of his illness one can hope for a remission rate of 75%. For patients treated during the first year of the illness the rate is 50% and still above the expectation of a spontaneous recovery. After the end of two years from the onset the chance of bringing about a full remission with coma therapy is almost negligible; but the treatment may still be worth giving in the hope of obtaining a clinical improvement. Follow-up studies have shown not only that a higher proportion of patients recover after insulin coma treatment than spontaneously, but also that recovery is more complete. Minor sequelae, even if not sufficient to interfere seriously with social adaptation, are in general common, but are less frequent in patients who have recovered after insulin treatment than in those who have recovered without treatment. It seems probable that relapse is rather more frequent in the insulin-treated patients than in those who have recovered spontaneously; and it may even be that results are equalized after a period of many years.

We do not, however, have sufficient information on the results to be expected over very long durations; but over comparatively short periods of five to ten years insulin treatment achieves much more than could be obtained without it.

Adjuvant Measures

E.C.T. can offer nothing like these figures, and its role in the treatment of schizophrenia is rather limited. There is little doubt that it helps in the management of some troublesome symptoms, such as stupor and states of negativism or confusion. If a predominant symptom is relieved in this way it may even appear that the patient has made a remission—until the progress of the disease results in less florid but more intractable changes. Such spurious remissions can be very deceptive to the clinician, and their frequency accounts for the fact that at some centres E.C.T. is still regarded as, to some extent, a treatment of the schizophrenic disease process. This, however, is bad practice. There is no justification for giving courses of E.C.T., or electronarcosis or psychotherapy, as a routine procedure and by way of substitute for insulin. Before such practice could be accepted it would have to be shown that these treatments influence the prognosis, and there is no evidence of that. Their use in the early stages may mean the waste of valuable time. The family doctor should therefore avoid, so far as possible, sending his schizophrenic patients to any hospital or treatment centre where insulin treatment cannot be given at the earliest practicable time after admission.

The role of E.C.T. and of psychotherapy is not as a substitute for insulin treatment but as an adjuvant. The best results are obtained when treatments can be combined. Insulin therapy halts or mitigates the progress of the disease, and is very effective in coping with some symptoms, such as states of excitement. It has a valuable effect on the weakening of emotional responsiveness and the tendency to disintegration of thought processes, which are the main causes of that dilapidation of personality which is the most dreadful result of schizophrenia. E.C.T. may be used in addition, and is then best given in the state of pre-comatose hypoglycaemic sopor to alleviate the depressive symptoms which are a frequent accompaniment of schizophrenia or one of the other special symptoms already mentioned, or for some other special purpose. Psychotherapy is especially valuable in helping in the reablement of the patient once the worst of his illness is over. It is undesirable even then that psycho-analysis should be used. It will do no good to drag up repressed material from the unconscious, and it may actually be dangerous to do so. What is wanted is help at the conscious level, to assist the patient to get over the bewilderment caused by his past psychotic experiences, to accustom him to the idea of taking up the threads of his past life and adjusting anew to the world outside hospital.

Selection of Cases for Insulin Therapy

Insulin treatment should be under the supervision of an expert with prolonged experience. In some centres the treatment is in the sole charge of registrars with no great acquaintance of the problems involved. The penalty of failure, to be paid by the patient, may be 30 years of life in a mental hospital, and there are few medical treatments where the stakes are so high.

It may be that the facilities for treatment in a given centre are limited, so that not all schizophrenic patients recently admitted can be transferred to the insulin ward. If this is so, then priority should be given to those patients in whom the onset has been most recent and most acute, whose original personalities were the best and are now the best preserved. If shallowness of affect is not marked, then there is likely to be a good deal of emotional response to the illness, taking the form of depression and anxiety. The state then may resemble a mixture of affective and schizophrenic symptoms, sometimes called "schizo-affective states." These patients respond to insulin as well as any, but if they are left untreated often deteriorate into states from which the affective element has disappeared, leaving only a now unmistakable schizophrenic dilapidation. An over-nicety in the diagnostic approach may therefore be of disservice to the patient. On the other hand, patients with a poor previous personality and with an insidious onset do not respond well and should not be preferred to more hopeful cases. When the "splitting" of personality is marked, so that, for instance, the patient describes his unpleasant feelings blandly or with a fatuous smile, the disease has probably already progressed too far for treatment to be hopeful. Hallucinations occurring in a clear state of consciousness are also not very encouraging.

Recent evidence has shown that the number of comas given is important. It has been suggested that a further 20 should be given after the patient has relinquished his delusional ideas and fresh psychotic experiences have ceased. This may not always be possible. But as many as 60 comas are often needed, and sometimes 80.

Relapse a few years, sometimes a few months, after treatment is unfortunately common. If it occurs, the patient should be treated again. Very few untreated patients survive more than two fresh attacks without showing grave changes of personality; but if treatment has been successful once it will probably succeed again.

In short, insulin treatment should be given in every early case, and as early as possible, and in all cases of doubt. The doctor should not hold his hand in the hope of a spontaneous remission, nor content himself with substitute methods. E.C.T., psychotherapy, and leucotomy have their place in special cases and for special purposes, but are not to be looked on as treatments for schizophrenia.

Electric Convulsion Therapy

The indications for E.C.T. are urgently in need of clarification. The results obtained in some cases are so dramatic and spectacular that clinicians are tempted to apply the method indiscriminately. Electroshock has its principal effect in relieving the feeling of depression, and is therefore often given in depressive states of any kind. Depressive states, however, vary much in nature, and the results of treatment are very unequal in states of different kinds. If this method of treatment has taught us nothing else, it has shown that the old-fashioned diagnostic approach which fails to distinguish between the different depressive syndromes is not a reliable guide.

Involutional Depression

Of all depressive conditions there is one in which E.C.T. is nearly sure of success. This is the so-called involutional depression, which, however, does not always occur as late as the name implies. It is characterized by an insidious onset without any noteworthy precipitating cause. The personality of the patient is often of

the obsessional type, of fixed habits, and he has frequently struggled long and painfully before seeking the advice of the doctor. The mood is a persistent one and is never completely relieved by any external distraction, such as a few hours spent in enlivening circumstances. It shows a daily rhythm and is commonly at its worst in the first hours of the day. The sleep rhythm also shows a characteristic disturbance: the patient can usually get off to sleep well enough but wakes again in the early hours. The clinical condition is at its most typical if some degree of retardation—that is, slowing down of responses and spontaneous activities—is shown. Qualities which are atypical and therapeutically discouraging are any marked tendency to anxiety or to paranoid symptoms or a previous personality of a tense and anxious kind. These patients, if submitted to E.C.T., usually begin to improve from the first or second treatment and fail in only about 10% of cases to make an eventually adequate recovery.

Manic-depressive State

The other common type of endogenous depression, the manic-depressive state, may resemble the type of depression first described in the clinical picture, but differs a good deal in the past history. The patient shows a cyclothymic rather than an obsessional personality, and has been subject to spontaneous swings of mood; and the onset of the illness is a good deal more rapid, occurring over days or weeks instead of months. The manic-depressive has often had a number of previous attacks of depression, perhaps at rather regular intervals, whereas the involutional patient has had none, or a single illness years before. Electroshock should be given to the manic-depressive patient in a tentative way. As things are to-day, these patients are often battered by prolonged courses of convulsions, with the only result that they develop confusional and dysmnesic symptoms and go into a state of utter despair. This is not to say that E.C.T. is not a useful aid here too. It is most helpful if it is given towards the end of a phase of depression, about the time when, judging by the history of previous attacks, a spontaneous remission could be hoped for, even if the patient shows no signs of its occurring. As E.C.T. is sometimes successful at other times too, one or two trial treatments can be given, and the attempt persisted with if the patient shows signs of responding, or abandoned if he is made to feel worse.

Reactive Depression

The same tentative method of trial application can sometimes bring success in another type of depressive illness, perhaps the commonest of all. This is the reactive depression which is brought on in the oversusceptible patient by environmental causes. The past history may at times resemble that of the manic-depressive patient, though the previous mood-swings will have had an adequate external causation and not have been endogenous. The clinical state, however, is very different, and one will not find the rhythmic quality, the specific sleep disturbance, or the retardation that characterize the endogenous depressions. Of course the proper way to treat reactive depressions is by dealing with the circumstances which have caused the emotional reaction and also perhaps by some relatively superficial psychotherapy. E.C.T. may prove helpful in some cases, however, which will have to be judged on their merits; if attempted, it must be given in a tentative way. If E.C.T. is going to work it should cause some improvement in the symptoms in the first 24 to 48 hours after a trial treatment; if the patient is made worse during that time, E.C.T. will not generally help him.

Depression Accompanying Organic Disease

Depression may be a marked feature in organic states, notably arteriopathic conditions, but also general paresis, the presenile dementias, and even disseminated sclerosis. E.C.T. given to these patients may greatly relieve the depression, but should be used with great caution and forbearance. Another neurological condition in which E.C.T. is occasionally useful is epilepsy. The indications, however, are very precise and are not suitably discussed here; only an expert on epilepsy is in a position to recommend treatment in this way and to decide exactly how it should be applied.

When to Start Treatment

In the involutional depression treatment should be begun as early as possible. Recent reports have shown that it may even be a life-saving measure. In clinical states of other kinds it is better to withhold treatment until the patient's case is thoroughly understood and the therapist is clear about his reasons for giving it. In recurrent endogenous depressives, for instance, treatment may be useless until the end of the biological phase is at hand. Older patients respond much better than younger ones. Patients have been successfully treated up to the age of 80. On the other hand, patients between the ages of 20 and 30 often give very disappointing results for two reasons. First, errors in diagnosis are very easy, and it is commonplace to mistake the onset of a schizophrenia for an affective state. Secondly, the younger patient is relatively more unstable, and the deleterious effect of E.C.T. in increasing instability is more likely to show in his case.

The Abuse of E.C.T.

In general, electroshock therapy is given far too freely and is in fact much abused. Many patients with reactive depressions, anxiety states with some accompanying depression, and hysterical syndromes into which depression enters are treated by E.C.T. although entirely unsuitable. This is a matter of no trifling concern, as these patients are frequently made much worse. Not only may the disturbances of memory, which may be produced by as few as half a dozen fits, hamper and distress the patient, but he may also suffer an increase in anxiety or develop symptoms of depersonalization. It is important that the doctor should take account of the personality as well as of the present state. Unstable and hysterical personalities are rendered more unstable by the treatment. It is also a deplorable fashion to give courses of treatment. A patient may, for instance, be ordered a course of 12 E.C.T., given twice weekly, which is rigorously carried through to the end regardless of the results which show in an intermediate stage. Much damage can be done this way. Large numbers of fits are sometimes given over a very short space of time, the so-called "intensive" E.C.T., for instance to schizophrenics, obsessionals, and psychopaths, often to relieve the symptom of tension, and sometimes with the false notion that the treatment will be a substitute for leucotomy. Even though the patient may thereby be battered into apathy for a few days or weeks, the tension recurs and the patient is burdened in addition with disturbances of memory.

Whatever the condition for which it is given, it is often unnecessary to give E.C.T. more than once a week. Treatments given twice or more a week may still take just as many weeks to produce recovery—which means that a number of treatments will have been given unnecessarily, with danger of impairment of memory. The goal of recovery cannot be attained without unnecessary cost by an impetuous rush. For this very reason treatment in out-patient clinics, where some forbearance must be exercised, is often more successful than treatment in hospital.

Leucotomy

The possible application of cerebral surgery in psychiatry is so great, and the feelings roused by its use run so high, that clear thinking and a dispassionate approach are especially necessary. Practically all workers with an extensive experience are agreed that the main significance of leucotomy is that it is the most certain measure we have for reducing anxiety and tension which have persisted for a long time. The symptoms for which it is effective are those which it is now fashionable, and indeed not meaningless, to attribute to "feed-back" processes in the C.N.S., on a metaphor taken from electronic engineering. Excessive anxiety, shown in one form or another, is responsible for a great part of mental ill-health and is prominent in very various clinical conditions, neurotic and psychotic. The persistent rumination on a complex of painful themes, which also enters so largely into mental disorder, is equally responsive to relief by this operation. It is therefore not surprising that, in Britain and the U.S.A., 50% of the schizophrenics who have had the operation in the first two years of illness have made some social readjustment, even though insulin and E.C.T. had failed. After two years of schizophrenic illness the percentage of recovery or great improvement drops to a much lower figure—nearer to 20%.

In depressive states, where we do not have to envisage the likelihood of a progressive deteriorative process, the results are more independent of the duration of the disease, although if the patient has been ill for a long time social rehabilitation is so much the more difficult. Nearly all patients suffering from a depressive psychosis who are leucotomized because they have failed to respond to E.C.T. make a good recovery; it is usually those with depressive states with a marked element of tension who are failures with E.C.T., and leucotomy is especially suitable for their condition.

The use of leucotomy in neurotic states is as yet insufficiently explored. There can be no doubt that many otherwise intractable cases may be greatly aided; but one hesitates to recommend such a drastic method of treatment unless the suffering and disability are great and no other hope can be held out. In a group of patients carefully selected like this 70% of worthwhile results have been obtained. Furthermore, whereas ordinary methods of treatment at their best bring about a restoration of the *status quo ante*, leucotomy produces a permanent alteration of the constitution and so offers a greater hope of stable results. The factor which weighs most heavily on the other side of the scales is the fear that the patient's personality will be damaged, and that psychological defects of a number of kinds will outweigh the good that is done.

Limited Operations

Much of the earlier work on the damage to the personality resulting from leucotomy is now of historical interest only. The recently developed undercutting operation of Scoville and modified anterior forms of leucotomy now widely practised, by which the section is sometimes confined to the lower quadrant of the frontal lobe, do not have anything like so much damaging effect as the original leucotomies. Rylander, who made one of the earliest and best follow-up studies on operations on the frontal lobe, and based on them some serious objections to leucotomy, now takes a different attitude to limited operations. Nevertheless there is still a good deal of ill-informed publicity in the popular press and on the radio, in which no allowance is made for the recent change in surgical procedure. The modern and more limited operations are enough to bring the needed relief to a wide range of patients, even though there are still some whose symptoms are so severe that something more will be required.

Selection of Cases and Results

It is not possible here to go into the pros and cons of "psychosurgery," but some simplification of the problems involved is possible. The first requisite is the decision that no other treatment is likely to help; to be able to decide so much one needs to have a working knowledge of the other methods. One then has to come to a reasoned judgment of the extent of the incapacity and the suffering of the patient and the likelihood that they will prove permanent if nothing is done. The individual symptoms must then be evaluated and conclusions drawn about the extent to which the illness involves anxiety and tension and is kept alive by rumination. If from the total state the anxious-ruminative tendencies are subtracted, what will be left? Symptoms may be derived from different causes, and in one patient a form of abnormal behaviour may be based on tension, in another on immaturity and impulsiveness. Irritability and ill-temper is a case in point, and in the one patient these symptoms will be helped by operation, in the other made worse. In the schizophrenic patient the clinical analysis must be made with subtlety and care. In so far as the symptoms are based on tension they may be helped by the operation; but if there is a marked degree of emotional flattening and schizophrenic "splitting" is prominent little benefit can be expected. The apathetic patient, no matter what the diagnosis, should rarely be submitted to operation.

In depressive states good results can be expected where tension rather than retardation is in the foreground. Retardation is a symptom which is more likely to respond to E.C.T., although it is also associated with manic-depressive syndromes which may be refractory to electrical shock. The typical manic-depressive patient will be considered as a candidate for leucotomy only if the recurrent attacks of illness are so frequent as to involve the greater part of the patient's life. Even then caution should be observed. Manic attacks are not prevented by leucotomy and may even be precipitated by it; and even posterior cuts may not abolish but only modify the biologically determined swings of mood in this hereditary form of mental disorder.

Obsessional states may respond to leucotomy after years of psychotherapy have failed to help. Patients whose symptoms mainly take the form of phobias and ruminations do much better than those who are tied down in fixed patterns of compulsive behaviour. Entire relief from severe and long-standing obsessional symptoms will hardly be expected with anything less than a posterior cut, inevitably involving damage to the

personality. Nevertheless a milder form of operation may greatly diminish anxiety and so take some of the compelling power from phobic symptoms and allow disabling modes of adaptation to resolve owing to lack of emotional reinforcement. A field even more suitable for operative treatment than the typical obsessional neurotic will probably be found in those neurotic patients who show much anxiety, some mild obsessional traits, and perhaps a degree of hysterical overlay. These patients rarely respond to psychotherapy and are often made worse by E.C.T.; but their symptoms are of a kind to respond to leucotomy, and the underlying personality is not so rigid as in the obsessional. In our experience when the anxiety and tension are relieved the hysterical component of the picture also diminishes. Such patients, however, must be distinguished from those in whom hysterical mechanisms are primary rather than secondary, who do not react well to surgery.

Research is now proceeding into the results of surgical treatment of other neurotic states, and is likely to be fruitful. We may particularly mention psychosomatic disorders in which anxiety and rumination are causing more distress than is warranted by the organic factors, other types of hypochondriasis, intractable anorexia nervosa, the mental reactions to intractable pain, tinnitus, organic dystonias, etc. All patients falling into the neurotic group will be considered only if the illness is of some years' duration, and treatment by other physical, psychological, or social means is not indicated or has already been tried and has failed.

The older the patient is the better he is likely to do, as the greater stability and even rigidity of habits of behaviour offer what we might call a margin of error. The increased emotional liability produced by the operation is more upsetting to the young. Furthermore, young persons suffering from a chronic mental illness, even though it be apparently neurotic in form, often prove in the end to be schizophrenic. Practitioners would be well advised, in seeking a second opinion on surgical treatment, not to pay too much heed to the advice of those whose minds are finally made up on grounds of principle. Every patient has to be judged on the merits of his case; and no unbiased judgment will be obtained either from the consultant who believes that all incurable schizophrenics should be leucotomized, or from the psychotherapist who believes that surgery is inadvisable in any case of neurotic illness.

Failures of Operation

The mortality of the operation, in patients who are not in an impaired state of physical health, is in the region of 1%. In few cases will the persons concerned be deterred by such a risk. Much more seriously worth considering are the twin risks of failure to improve and of impairment of personality. Although progress is slow there are good grounds for hoping that improvement in operative technique, itself dependent on increasing knowledge of the function and connexions of the frontal lobe, will permit a much greater degree of precision than at present. Some failures to respond may be due to an inadequate operation, and in some of these cases a second operation has been more successful. Many patients, especially in the schizophrenic group, fail to improve because of the severity of their mental illness. The operation may bring about a greater social accessibility but reveal an unsuspected degree of deterioration of personality and flattening of emotional responsiveness. Such defects in these cases should be attributed to their true cause, the sequelae of the schizophrenic process, and not in the absence of evidence laid to the discredit of the operation.

Damage to the personality is most to be feared in those whose livelihood depends on its full preservation. What may represent a negligible danger to a man engaged in routine duties may be too serious to face in the case of a writer who needs all his capacity for imaginative and constructive thinking. In the same way the loosening of a sense of responsibility which may follow operation may be a contraindication to surgery in the case of a man with antisocial tendencies, while it is positively desirable in the overscrupulous.

GUIDING THE BLIND

BY

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The question of finding their way about has always been a problem to the blind. The experiences of a great number of young men in the technical arms of the Services, and especially in the R.A.F., who used radar, led many of those who became blinded as a result of their war service to suggest that some adaptation of radar might aid them. This led to a consideration of the scientific possibilities of aiding the blind.

The Problem

To be practical, a guiding aid should give sufficient information about surrounding objects to enable a blind man to walk freely at a moderate speed along streets or inside buildings. To do this it must indicate the distance and direction of any obstacle within 6 ft. sufficiently rapidly to allow the path to be chosen accordingly. Moreover, it must be very light in weight, compact, and inconspicuous. At a range of only a few feet it is impracticable to use a normal radar beam as an exploring medium, and light, or ultrasonic energy, must be used.

A factor to be borne in mind is the natural ability of many blind men to find their way about with little assistance. A blind person who has the ability and inclination to learn how to use an instrument is usually able also to learn to find his way largely unassisted. Then, with the aid of only a walking-stick, or even without this, he can go to and from work, to a friend's house in the evening, or on any journey he knows well. The chief use of a guiding instrument might therefore be to help on totally new routes.

Several different devices,[1] including two based on the use of light beams and three on ultrasonic energy beams of different frequencies, were first constructed at St. Dunstan's. The beam was narrow, about 2 in. square at 6 ft., to enable objects to be located. Range was measured in the ultrasonic devices in terms of the time delay between the transmission of an ultrasonic pulse and the reception of the echo returned by an object in the path. The blind man was informed of the presence of this obstacle by hearing a new sound, the pitch of which indicated the range. Light travels so fast that it is reflected back over 6 ft. or so in an

[1] See *Electronic Engineering*, January, 1951, pp. 2–7.